

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A plasma processing method ~~which comprises~~ comprising the steps of:  
supplying a processing gas to a vacuum vessel forming a plasma production part, and having a sample disposed therein;  
producing a plasma using an antenna and a Faraday shield ~~which are provided~~ arranged at outer periphery of the vacuum vessel and ~~to which~~ having a high-frequency electric power ~~can be applied,~~ to the antenna and the Faraday shield;  
and  
carrying out ~~the processing,~~ of the sample;  
wherein a voltage of at least 500 V is applied to the Faraday shield, ~~and a~~ the sample which is disposed in the vacuum vessel ~~and which~~ is a nonvolatile material as a material to be etched is etched.

2. (currently amended) A plasma processing method ~~which comprises~~ comprising the steps of:  
supplying a processing gas to a vacuum vessel forming a plasma production part;  
producing a plasma using an antenna and a Faraday shield ~~which are provided~~ arranged at outer periphery of the vacuum vessel and ~~to which~~ having a high-frequency electric power ~~can be applied,~~ to the antenna and the Faraday shield  
and  
carrying out ~~the processing;~~

wherein a voltage of at least 500 V is applied to the Faraday shield<sub>1</sub> and reaction products deposited on the inner wall of ~~the~~ vacuum vessel are ~~cleaned~~ removed therefrom.

3. (original) A plasma processing method according to claim 2, wherein the processing gas is a mixed gas comprising boron trichloride and chlorine.

4. (currently amended) A plasma processing method according to claim 3, wherein the processing gas is supplied so that the mixed gas comprises 20% of boron trichloride and 80% of chlorine, thereby cleaning the inner wall of the vacuum vessel to remove the reaction products deposited thereon.

5. (original) A plasma processing method according to claim 2, wherein a voltage of at least 1500 V is applied to the Faraday shield.

6. (currently amended) A plasma processing method ~~which comprises~~ comprising the steps of:

supplying a processing gas to a vacuum vessel forming a plasma production part;

producing a plasma using an antenna and a Faraday shield ~~which are provided~~ arranged at outer periphery of the vacuum vessel and ~~to which~~ having a high-frequency electric power ~~can be applied,~~ to the antenna and the Faraday shield; and

carrying out ~~the~~ processing,

wherein the method further comprises ~~the~~ a first step of carrying a dummy wafer onto a sample stand, applying a voltage of at least 500 V to the Faraday shield and removing foreign matters in the vacuum vessel with a plasma using a gas containing chlorine, ~~the~~ a second step of etching a sample which is disposed on the sample stand in the vacuum vessel and which is a nonvolatile material as a material

to be etched after the first step, and ~~the~~ a third step of applying a voltage of at least 1500 V to the Faraday shield after the second step, and removing reaction products in the vacuum vessel using a mixed gas comprising boron trichloride and chlorine.

7. (currently amended) A plasma processing method ~~which comprises~~ comprising the steps of:

supplying a processing gas to a vacuum vessel forming a plasma production part, producing a plasma using an antenna and a Faraday shield ~~which are provided~~ arranged at outer periphery of the vacuum vessel and ~~to which having~~ a high-frequency electric power can be applied, to the antenna and the Faraday shield; and carrying out ~~the processing, of samples;~~

wherein the method further comprises detecting a number of foreign matters in the vacuum vessel ~~is detected by a monitor for foreign matters in real time during the processing of the samples, cleaning by~~ applying a voltage of at least 500V to the Faraday shield is carried out in case when the number of foreign matters detected exceeds a given upper limit for cleaning of an inner wall of the vacuum vessel and ~~the terminating the cleaning is terminated in case when~~ the number of foreign matters detected decreases below a given lower limit.

Claims 8 and 9 (canceled)